

Notice of Allowability

Application No.

10/525,508

Applicant(s)

INAOKA, HIROYA

Examiner

Xiuyu Tai

Art Unit

1795

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 4/24/2009.
2. ☒ The allowed claim(s) is/are 1-9 and 12-16.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

DETAILED ACTION

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. Daniel Shanley.

The application has been amended as follows:

In claim 1, line 4 on page 2, deleted "one of " after word "cools", and inserted -- first-- before word "thermal";

In claim 1, line 5 page 2, deleted "said one of " after word "of" , and inserted -- first-- before the second "thermal";

In claim 1, line 8 on page 2, deleted "the other one of " after word "and" , and inserted --second-- before the second "thermal";

In claim 1, at the end of line 8 and the beginning of line 9 on page 2, deleted "said other one of " after word "with", and inserted --second-- before word "thermal";

In claim 1, line 11 on page 2, deleted "said other one of " after word "with" , and inserted --second-- before the second "thermal";

In claim 2, line 6 on page 2, deleted "said one of " after word "from", and inserted - -- first-- before word "thermal";

In claim 4, line 3 on page 3, deleted "said one of " after word "of" , and inserted -- first-- before word "thermal".

Allowable Subject Matter

2. The following is an examiner's statement of reasons for allowance: the closest prior art are Cantoni (U.S. 4,753,682), Miyamoto et al (JP2003-278539, publication date: 10/2/2003), Tabata (JP2001-023666).

Cantoni discloses a thermoelectric effect for current generation in vehicles. Specifically, the system comprises a thermoelectric generator 20 to generate electricity from a high temperature side 9 provided from the engine coolant (Figure 2; col. 3, line 28-30) and a low temperature provided from air (col. 4, line 15-20). However, Cantoni does not teach or suggest a low temperature generated from a heat pump that utilizing the heat from the high temperature medium and the high temperature medium is high temperature coolant being used to cool the drive device in a vehicle.

Miyamoto et al disclose a heat using system for a moving truck (paragraph [0041]). The system generates electricity from thermoelectric power generator 10 using exhaust gas as heat source (paragraph [0013]) and cooling water from engine as heat sink (paragraph [0016]). However, Miyamoto does not teach or suggest a low temperature generated from a heat pump that utilizing the heat from the high temperature medium and the high temperature medium is high temperature coolant being used to cool the drive device in a vehicle.

Tabata discloses a waste heat recovering device for a vehicle. The device of Tabata utilizes engine coolant as high temperature and ambient air as low temperature onto thermoelectric element 95 (Drawing 1; ABSTRACT; paragraph [0054]). However, Miyamoto does not teach or suggest a low temperature generated from a heat pump that utilizing the heat from the high temperature medium and the high temperature medium is high temperature coolant being used to cool the drive device in a vehicle.

None of the prior art teaches or fairly suggests a low temperature generated from a heat pump that utilizing the heat from the high temperature medium and the high temperature medium is high temperature coolant being used to cool the drive device in a vehicle. Therefore, claims 1-9, and 12-16 are allowed over the prior art in record.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Xiuyu Tai whose telephone number is 571-270-1855. The examiner can normally be reached on Monday - Friday, 7:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer Kolb-Michener can be reached on 571-272-1424. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1795

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/X. T./

Examiner, Art Unit 1795

/Jennifer K. Michener/

Supervisory Patent Examiner, Art Unit 1795